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12 January 1971

MEMORANDUM FOR: Director for Special Activities

SUBJECT : Aero Medical Staff's Accomplishments
During Recent Years

It has occurred to us that this is the time of year for appraisals and data accumulation on one's organization in order to intelligently defend on the budgetary field of honor. We, therefore, present the following outline which might be of interest to review:

1. Para-sail Training

This is believed to be the only water-launched training program aimed at giving a pilot the complete experience of parachuting into water under conditions of utmost safety. Credits for developing this system belong to

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USAF review(s)
completed.

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GROUP 1
Excluded from automatic
downgrading and
declassification

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3. Full-Pressure Suit and Thermal Liner

It is fairly ancient history at this point that the first full-pressure suit, 901-J, was an in-house development in conjunction with the David Clark Company and ARO of Buffalo Corporation for the OXCART aircraft. From this suit was derived the present S1010 PPA which is also used by the Air Force SAC U-2 Program. The essential features of the S1010 were used by Clark to produce the 22S-6 suit which is the standard full-pressure suit used by the USAF in B-57's.

Of more recent note is the development in 1969 of the thermal liner which greatly enhances the possibility of survival of a pilot downed in cold waters. This improvement has been approved by SAC and is in use in the U-2 Program. It is now being ordered for the SR-71.

25X1 [REDACTED] 25X1 [REDACTED] our Physiological Training Officer at that time, had immediately contacted [REDACTED] at David Clark Company to initiate research on the problem. 25X1 At the same time [REDACTED] who was attached to Intell/O/OSA, sent a Memorandum on the subject to the then Director for Special Activities who indicated his interest and suggested the subject be presented to the next U-2R Requirements

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Review Board. Meanwhile, [] made baseline studies in the S1010 suit consisting of personally immersing himself in an ice pool, etc.; later developing and testing the garment at the School of Aviation Medicine, Brooks AFB, Texas, leading to its ultimate adoption. During this period he was assisted by [] and the program was finalized under []

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4. Light-Weight Jungle Hammock

During Evasion and Escape and Survival Training, it was noted that a one-piece jungle hammock would be of great assistance to the downed pilot, particularly in the SE Asia area. The G.I. issue jungle hammock is too large to fit in the seat kit. Working together, [] [] pieced out a suitable hammock of light-weight materials and submitted this design to a manufacturing company which now produces this item. It fits into the seat kit and is a selective item on missions where it would be of value.

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The hammock and the following two articles have been given a high security rating and have not been disseminated to other groups.

5. Magnetic Shirt-Collar Stays

These are as named and can be removed and used as a compass.

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These latter two items (5 and 6), I believe, are attributable to []

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7. Open-End Raft or Dinghy

[redacted] noted the difficulty the pilots experienced in boarding an inflated raft in their cumbersome full-pressure suits and personally conceived the idea of a compartmented raft with a separate section on the end which remained uninflated until the man was aboard and then the raft could be secondarily inflated. This was used at the end of the OXCART Program and is currently used in all the U-2's and in the SR-71. They also developed a pump that is included in the seat kit which can be used to inflate the hood of the raft as well as to bail it out.

8. White Outer-Coverall for S1010 Suit

Coveralls have always been an O.D. color. The pilots complained of heat from the sun at altitude and on the ground. The back of the hands have also been a source of complaint. [redacted] had a trial white Nomex outer garment made for one pilot and it was so well received, all the pilots are being so equipped.

9. Urine-Collecting Device

Faced with the anticipated problems of much longer missions to be flown in the U-2R, [redacted] worked with the Clark Company to develop what is believed to be the only operational suit modification that will allow a pilot to relieve his bladder without encountering any serious difficulties.

10. In early 1970 [redacted] jump tested the S1010 suit and found that the legs could not be brought together when landing because of the positioning of the parachute harness in the chute. He then visited the David Clark Company and arranged with them for a modification that has been adopted by all users.

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11. Six-Line Release

In February 1971 [redacted] is scheduled to jump test at El Centro Naval Test Center a new procedure that substitutes for the six-line cut. If this is accepted, it will become S.O.P. for the RQ 225 Parachute used in the U-2R and SR-71.

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[redacted]
Chief, Aero Medical Staff
Office of Special Activities

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C/AMS/OSA [redacted]

Distribution

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